

Bloom's & SOLO Taxonomy

Different ↔ Interrelated




- **Classify forms and levels of teaching and learning**
 - **Formulate outcomes**
 - **Facilitate process of learning**
 - **Construct assessing tasks**

Bloom vs SOLO

- Bloom = outcomes and questions
- SOLO = indicate quality of learning = answer

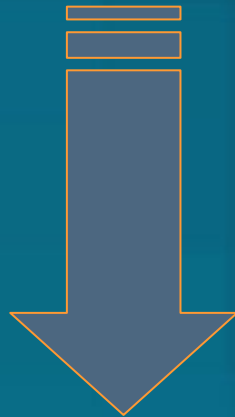
Bloom's Taxonomy

Three Domains of Learning (KSA)

Cognitive (Knowledge) 	Intellectual skills	Know that...
Psychomotor (Skills) 	Manual or physical skills	Know how...
Affective (Attitudes) 	Growth in feelings or emotional areas	Know how to express...

Most Complex

Three KSA Domains



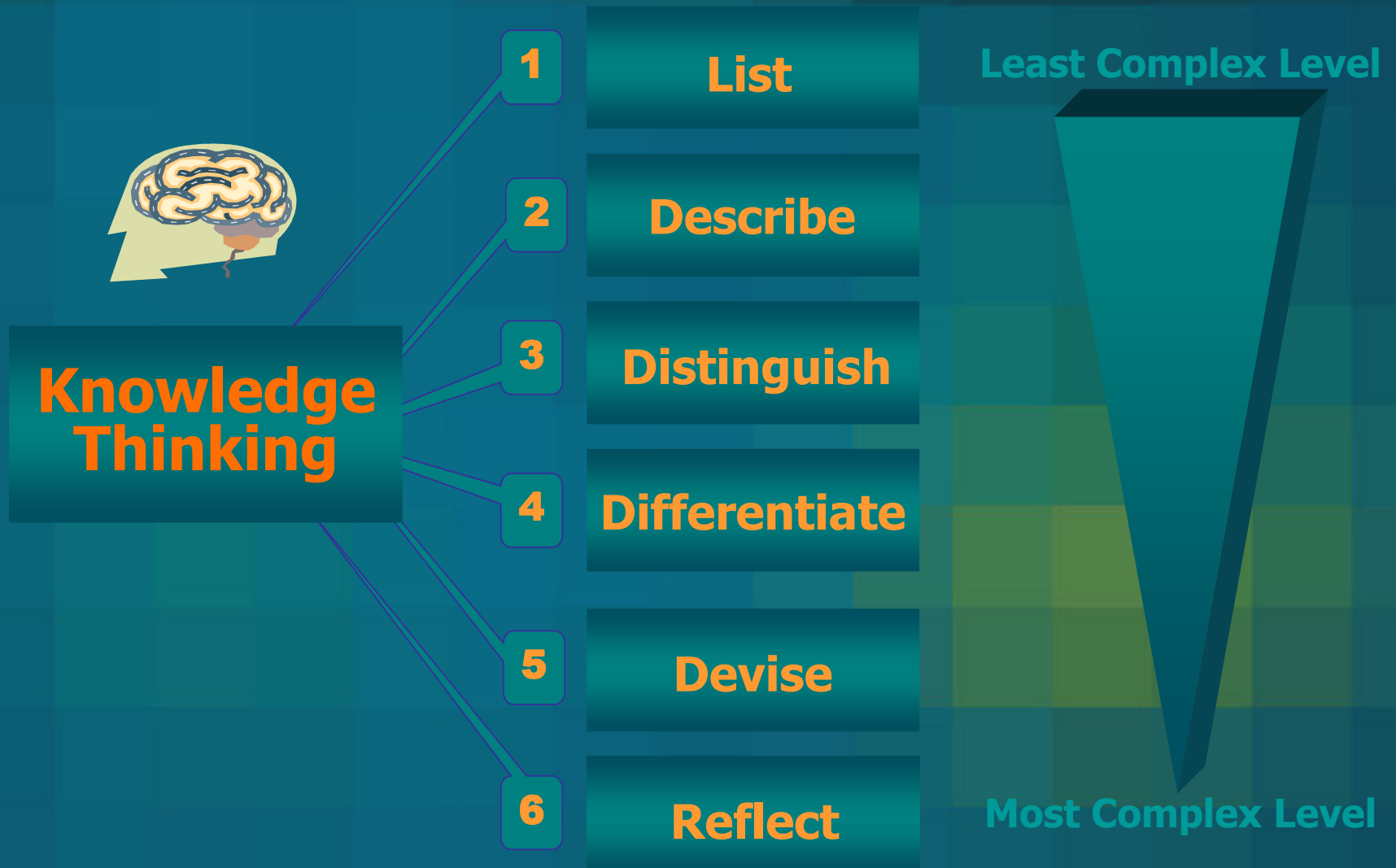
Categories / Levels

Least Complex

Categories in the Cognitive Domain



Verbs associated with cognitive performance

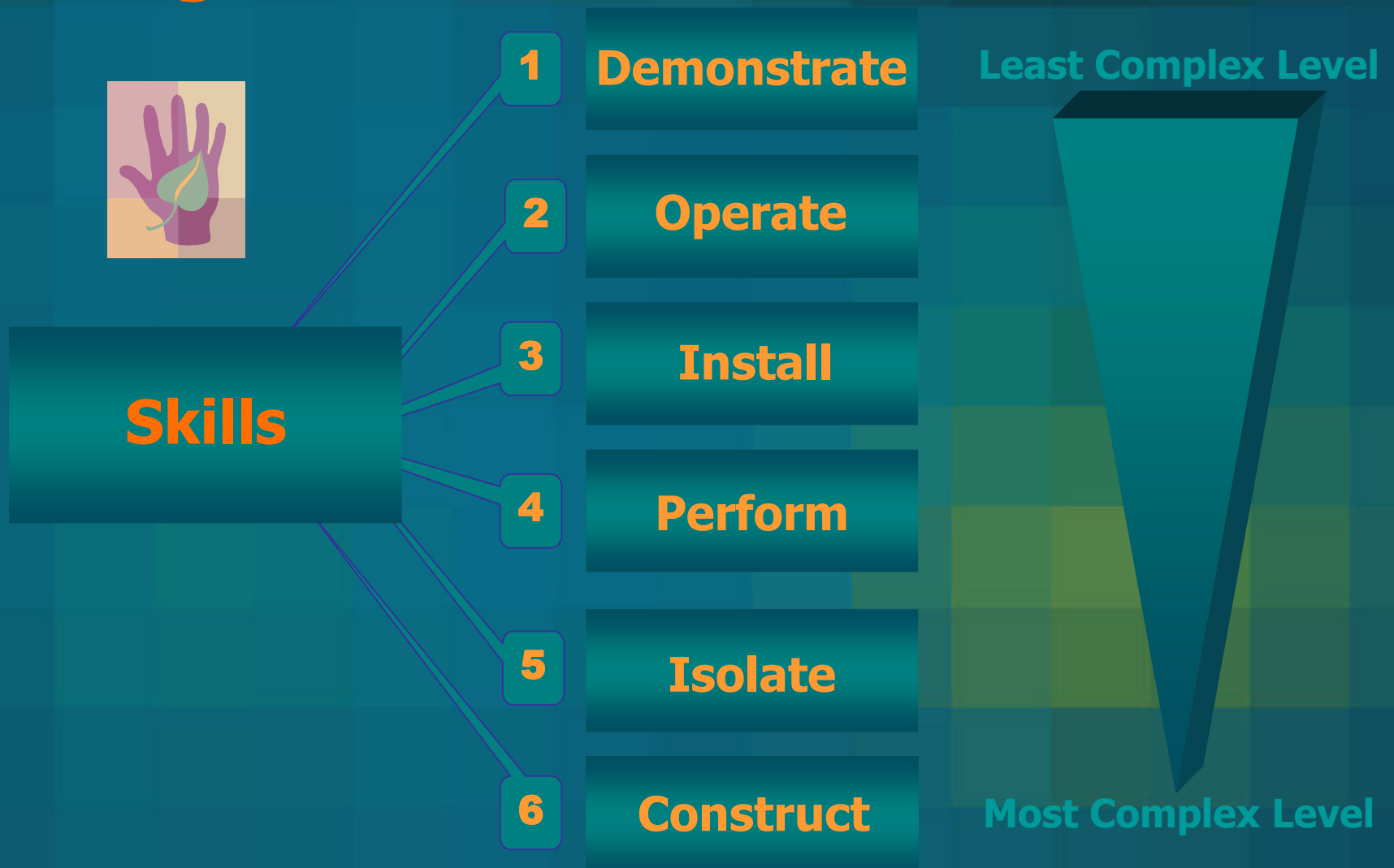




Categories in the Psychomotor Domain



Verbs associated with Psychomotor performance



Categories in the Affective Domain



Most Complex Level

Internalising

Organisation

Valuing

Responding

Receiving

Character

Prioritises time

Value differences

Active participation

Willing to hear

Least Complex



Verbs associated with affective performance

Least Complex Level

Most Complex Level

Receiving	Responding	Valuing	Organisation	Characterisation
Listen to Perceive Be alert to Show tolerance of	Reflect Reply Answer Follow along Approve Obey	Attain Assume Support Participate Continue	Organise Select Judge Decide Identify with	Believe Practice Continue to Carry out

Action words for learning outcomes

Knowledge	Thinking	Psychomotor	Attitudes
Identify	Reflect	Demonstrate	Challenge
List	Compare	Produce	Reflect
Define	Contrast	Assemble	Judge/Question
Describe	Catalogue	Install	Accept
State	Classify	Adjust	Adopt
Prepare	Evaluate	Operate	Advocate
Recall	Forecast	Detect	Accept
Express	Formulate	Arrange	Bargain
Categorize	Investigate	Build	Cooperate
Chart	Modify	Isolate	Endorse
Rank	Organise	Conduct	Justify
Distinguish	Research	Check	Persuade
Explain	Translate	Manipulate	Resolve
Outline	Differentiate	Lay out	Select
Inform	Analyse	Perform	Express
Label	Compute	Sort	Approve
Specify	Devise	Construct	Choose

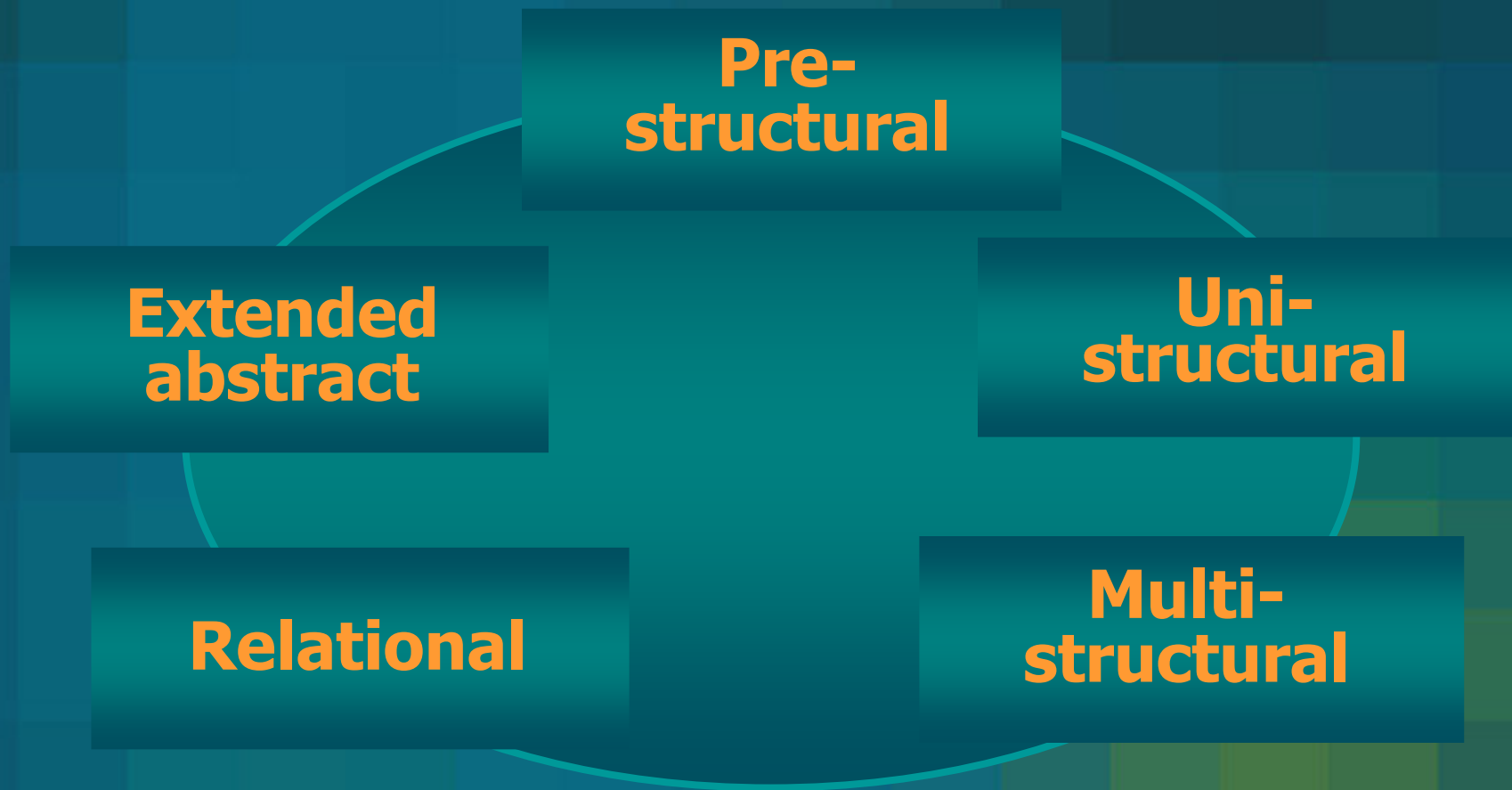
SOLO Taxonomy

The SOLO taxonomy stands for:

Structure of
Observed
Learning
Outcomes

developed by [Biggs and Collis \(1982\)](#), and is well described in [Biggs \(1999\)](#)

5 Typical ways to answer a question



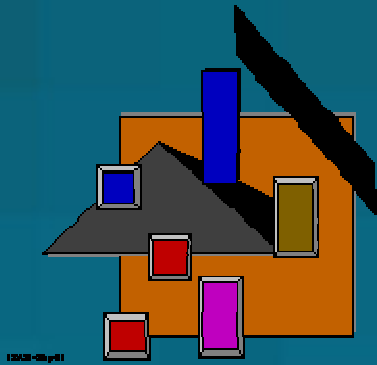
**Explain why cheetahs
have spots.**

Example used by Killan 2004:78

1. Pre-structural

<i>answer</i>	<i>characteristics</i>
“I don’t know.”	No attempt to answer the Q
“So that they are different from lions”	The response is irrelevant

no structure to the answer



1. Pre-structural

- Give no answer
- Repeat what was said in class
- Guesses the answer
 - “It looks right to me”

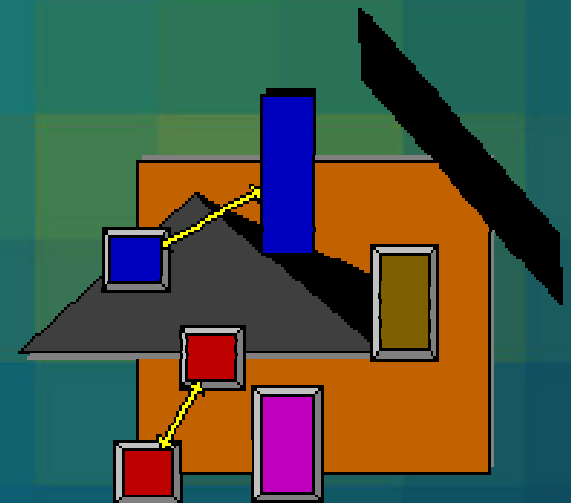
2. Uni-structural

<i>answer</i>	<i>characteristics</i>
“It makes them hard to see”	True, but with no explanation

Answer focuses on just one relevant fact

2. Uni-structural

- Gives a simple correct answer
- Based on a quick decision
- No explanation provided



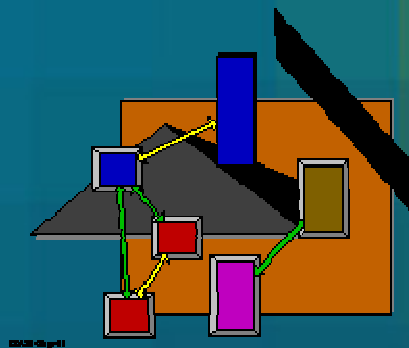
3. Multi-structural

<i>answer</i>	<i>characteristics</i>
“The spots are formed by melanin in the skin. The spots camouflaged them while hunting”	True, but with no explanation

Answer based on several relevant concrete details

3. Multi-structural

- Uses two or more explanation
- No integration of additional knowledge



4. Relational level

<i>answer</i>	<i>characteristics</i>
“The spots are formed by melanin in the skin which is a chemical reaction during embryotic development. The spots evolved after mutation to camouflaged them while hunting”	Biological explanation and link it to evolution

Answer focuses on ideas that relate all the relevant details



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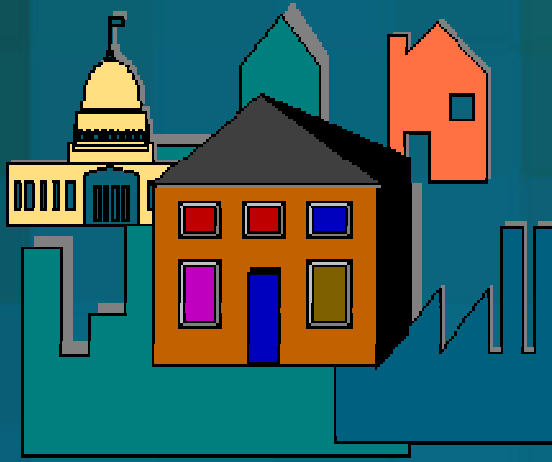
4. Relational level

- Integrates prior knowledge
- Links ideas to explain information

5. Extended abstract

<i>answer</i>	<i>characteristics</i>
<p>“The spots are formed by melanin in the skin which is a chemical reaction during embryotic development. The spots evolved after mutation to camouflaged them while hunting. Stripes will not be an advantage that is why the ‘king’ cheetah is so rare in the wild. The spots are mathematical patterns that can be described with partial differential equations. ”</p>	<p>Extended abstract thought.</p>

Answer recognises other possibilities and abstract principles



5. Extended abstract

- goes beyond what has been taught
- uses logical deductions to frame the answer

Purpose

- 🖐️ Label ⬆️⬆️ achievers
- ☑️ Framework - quality of learning
- 👍 Get the desired answer
 - List, name = uni-structural answer
 - Describe = multi-structural answer
 - Analyse = relational answer
 - Predict or reflect = abstract answer

Benefits

- Diagnostic tool - provides feedback
- Assessment tool - rubric
- Curriculum planning tool
- Describes learning outcome
- Setting standards
- Guides assessment tasks

